UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,611	06/27/2001	Mamoru Nakasuji	010817	8874

38834 7590 09/21/2005

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER	
BERMAN, JACK I	

ART UNIT	PAPER NUMBER
2881	

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

H.A

Office Action Summary	Application No.	Applicant(s)	
	09/891,611	NAKASUJI ET AL.	
	Examiner	**Art Unit**	
	Jack I. Berman	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 12 September 2005.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 105-108,110-119,121,122,124-130,136-140,142-144,146 and 148 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) 126,137-140 and 148 is/are allowed.

6)☒ Claim(s) 105-108,110-119,121,122,124,125,127-130,142-144 and 146 is/are rejected.

7)☒ Claim(s) 136 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 22 October 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 114 and 115 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,892,224 to Nakasuji. Nakasuji discloses an inspection method and apparatus for irradiating electron beam to a sample to inspect the sample, comprising the steps of:

(a) irradiating a surface of the sample with a plurality of primary electron beams (EB11, EB21, EB31, ..., EB36) by a primary electronic optical system with an optical axis that has a function of scanning the primary electron beams simultaneously,

(b) converging secondary electrons generated from each of irradiating points of the a plurality of primary electron beams formed on the surface of the sample,

(c) leading converged secondary electrons toward to a detector by a secondary optical system with an optical axis,

(d) detecting the secondary electrons using a plurality of detectors (M11, M21, M31, ..., M36) so as to introduce them into an image processing system (processor 12) for forming an image by the secondary charged particles and a data processing system (memory 14) for displaying and/or storing a state information of the object to be inspected based on an output from the image processing system,

(e) repeating above steps (a) to (d) while transferring the sample successively (see lines 51-59 in column 16) and precisely positioning the beam on the object to be inspected by measuring a position of the object to be inspected (see lines 61-67 in column 14),

wherein the irradiating points of the primary electron beams are disposed in rows N in a direction of transferring the sample and in columns M in a direction perpendicular to the direction of transferring the sample (see Figures 2(b) and 7). At lines 36-41 in column 9, Nakasuji teaches that the positions at which the plurality of the charged particles are irradiated are separated enough that the secondary charged particles generated by each beam will only be incident on the detector designated for that beam, i.e. the separation of these positions is larger than a distance resolution of the secondary optical system.

Applicant's arguments filed August 9, 2005 have been fully considered but they are not persuasive. Applicant argues: "According to the inspection apparatus defined in claim 114, it is easy to provide the secondary optical system with a resolving power of one micron or less and to arrange multiple beams with intervals of one micron or less, and it is possible to increase the throughput of the apparatus greatly by including a plurality of charged particle beams in one primary optical system and one secondary optical system." Applicant's argument fails to comply with 37 CFR 1.111(b) because it amounts to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Applicant also argues that Nakasuji does not teach to irradiate the charged particle beams at positions that are "separated larger than a distance resolution of the secondary optical systems." As the examiner explained in the previous Office actions and repeated above, Nakasuji teaches, at lines 36-41 in column 9, that the positions at which the plurality of the charged particles are irradiated are separated enough that the secondary charged particles generated by each beam will only be incident on the detector designated for that beam, i.e. the separation of these positions is larger than a distance resolution of the

secondary optical system. Applicant acknowledged this statement in the remarks accompanying the amendment filed on August 18, 2004, but then asserted that this does not anticipate this feature of claim 114. Since applicant has never supported this assertion with either evidence or a line of reasoning, it is does not constitute a persuasive argument.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 105, 113, 116-119, 124, 125, 127-130, 143, 144, and 146 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakasuji in view of U.S. Patent No. 4,954,705 to Brunner et al. (It should be noted that, contrary to the statement made in the remarks accompanying the amendment filed on August 9, 2005, claims 143, 144, and 146 were not among the claims that were canceled.) As was explained in the previous Office action, Nakasuji discloses an inspection apparatus for inspecting an object of inspection by irradiating the object of inspection with charged particles comprising:

a working chamber controllable into a vacuum atmosphere for inspecting an object of inspection (not labeled but inherently required because electron beam optical systems only work in a vacuum);

a beam source (1) for generating the charged particles or the electromagnetic wave as a plurality of beams (EB11, EB21, EB31, ..., EB36);

a primary electronic optical system for irradiating the plurality of beams to the object of inspection held in the working chamber, and a secondary electronic optical system, including at

least one lens (9), for converging secondary charged particles generated from the object and leading to an image processing system (signal processor 12) which forms an image based on the secondary charged particles;

a data processing system (memory 14) for displaying and/or memorizing a state information of the object based on output of the image processing system; and

a stage system (28) for holding the object so as to be movable relative to the beam,

wherein an electric field for accelerating the charged particle beams is applied between a first stage lens of the secondary optical system and a surface of the object (lines 13-19 in column 9), and the secondary charged particles emitted from the surface of the object at an angle relative to a normal line of the surface of the object pass through the secondary optical system. While Nakasuji does not specifically teach to use secondary charged particles emitted at an angle of 45 degrees relative to the normal, the patent does teach at lines 23-41 in column 10 that the angle should be oblique and large enough to allow more space for detectors than is permitted by the space permitted when the primary beam irradiates the sample from a normal. Since angles of at least 45 degrees meet this criterion, such angles would be at least obvious over, if not inherently anticipated by, Nakasuji. While Nakasuji irradiates the sample with the primary beams at an oblique angle so as to provide separation between the primary beams and the secondary electrons emitted so that there is more room for detectors, Brunner et al. discloses an inspection apparatus wherein the electronic optical system comprises an objective lens (L2) and an E x B separator (WF), forms a plurality of beams to irradiate the object (see lines 14-22 and 37-48 in column 3), and includes an optical system for accelerating secondary charged particles emitted by irradiation of the beams through the objective lens (see lines 48-51 in column 2), separating the particles by

the E x B separator (see Figure 2), and projecting an image of secondary charged particles (see lines 51-62 in column 2), and a plurality of detectors for detecting the image of secondary charged particles (see lines 62-66 in column 2). (The Brunner et al device is also described in Section 3 of the article "Multi-Beam Concepts for Nanometer Devices" by Lischke et al., cited in the Information Disclosure Statement filed on January 18, 2002.) It would have been obvious to a person having ordinary skill in the art to use the electron-optical system disclosed by Brunner et al. to control the multiple electron beams used by Nakasuji when the Nakasuji apparatus is used to inspect semiconductors for defects since the Brunner et al. electron-optical system is designed specifically for this purpose. Since both Nakasuji and Brunner et al. teach that the plurality of charged particle beams may be formed by either providing a plurality of electron beam sources or an aperture plate that divides a single electron beam into a plurality of electron beams, the provision of both a plurality of electron sources and aperture plates that divide the electron beams from each of these electron sources into a larger plurality of beams would have been an obvious duplication of parts, as would the provision of a plurality of E x B separators as claimed in Claim 140 of the instant application. While Brunner et al. uses the same lenses for both the primary electrons and the secondary electrons, the patent explicitly teaches at lines 56-64 in column 3:

> "Further lenses can be provided in the described electron beam measuring instrument in order to achieve the necessary demagnification of the primary electron source or, respectively, magnification of the secondary particle source.
>
> Of course, it is also possible to separate the electron-optical beam paths of primary particles and secondary particles and to provide imaging elements for each beam path."

Nakasuji further teaches, at lines 13-62 in column 11, that when the plurality of electron beams are formed by means of an aperture plate between the electron source and the sample, the position of the single aperture plate in the direction of the optical axis should be disposed so as to minimize the difference in beam strength of the beams to be delivered from each aperture to the surface of the sample. At lines 41 in column 12 through line 41 in column 13, Nakasuji also teaches to provide a second multi-aperture plate with a plurality of apertures disposed in front of the detector wherein the positions of the apertures formed in the second multi-aperture plate are arranged so as to correct a distortion in the secondary optical system.

Applicant's arguments filed August 9, 2005 with regard to the rejection of these claims have been fully considered but they are not persuasive. Applicant argues:

> "Although Brunner et al. includes the description of "Further lenses can be provided in the described electron measuring instrument - - it is possible to separate the optical beam paths of primary particles and secondary particles and to provide imaging elements for each beam path", since the lens condition in Brunner et al. gives preference to focusing the primary beam, lens excitation conditions can not be adjusted even if the image of the sample is not focused on the detector in order to avoid making the focused slender primary beam to be blurred. Accordingly, claim 105, 113, 116, 117, 125 and 129, all of which include a limitation of "at least one lens between the E x B separator and the detectors" are patentable over Nakasuji and/or Brunner et al."

This argument basically consists of the assertion that because Brunner et al. does not teach to provide separate lenses for the primary and secondary electrons in the *preferred* embodiment, it does not matter that alternate embodiments that do teach to provide such separate lenses, which would inherently involve separating the secondary charged particles from the primary charged particles after they pass through the objective lens before they enter the next lens, are explicitly suggested. The argument is not persuasive because everything contained in a reference is

available to a person having ordinary skill in the art, not just the preferred embodiment. Since Brunner et al. does teach that it may be desirable to send the secondary charged particles through separate lenses than those used for the primary charged particles, this teaching is available to a person having ordinary skill in the art and it would have been obvious to such a person to use this electron-optical system with separate lenses for the primary and secondary charged particles disclosed by Brunner et al. to control the multiple electron beams used by Nakasuji when the Nakasuji apparatus is used to inspect semiconductors for defects since the Brunner et al. electron-optical system is designed specifically for this purpose. Applicant also argues that the examiner was incorrect when he stated in the previous Office action:

> "Nakasuji further teaches, at lines 13-62 in column 11, that when the plurality of electron beams are formed by means of an aperture plate between the electron source and the sample, the position of the single aperture plate in the direction of the optical axis should be disposed so as to minimize the difference in beam strength of the beams to be delivered from each aperture to the surface of the sample."

However, applicant does not explain in what way the examiner was incorrect. As the examiner explained in the previous Office action:

> "This [the above cited section of the Office action], by definition, means that the plurality of apertures would be located within a range of a predetermined current density of charged particles and would inherently minimize the difference between the amount of secondary particles detected for the plurality of apertures when no pattern is disposed on the sample because if the primary beams and the sample were both uniform, then the beams of secondary particles would also inherently be uniform."

Where is the alleged flaw in the examiner's reasoning?

Claims 106-108 and 111 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakasuji in view of Brunner et al. as applied to claims 105, 113, 116-119, 124, 125, 127-130, 143, 144, and 146 above, and further in view of U.S. Patent No. 6,344,750 to Lo et al. As was

explained in the previous Office actions, Nakasuji does not teach how the object under test is moved in or out of the (inherently required) working chamber, to isolate the object under test from vibrations, to apply a voltage to the object under test, how the object under test is held, or how the positioning of the object under test is determined. Lo et al. discloses scanning electron beam inspection apparatus similar to Nakasuji's and teaches at lines 53-60 in column 7 that transport mechanisms for securing an object under testing for transportation into and out of a testing chamber are conventional. It would have been obvious to a person having ordinary skill in the art to provide the Nakasuji/ Brunner et al. apparatus discussed above with the conventional transport mechanism cited by Lo et al. At lines 48-53 in column 7, Lo et al. teaches to provide a vibration isolator (50) for preventing vibrations of the object under testing. It would have been obvious to a person having ordinary skill in the art to provide such a device in the Nakasuji/ Brunner et al. apparatus discussed above because vibrations would be as detrimental to image resolution in the Nakasuji/Brunner et al. apparatus as they would be in the Lo et al. apparatus. At lines 4-20 in column 7 Lo et al. teaches to apply a voltage to the object (22) from a bias source (28) and to increase or decrease this voltage from zero to a predetermined value in order to either optimize voltage contrast or control the landing energy of the primary beam to prevent charge leakage through layers on the object under inspection. It would have been obvious to a person having ordinary skill in the art to apply this voltage to the sample in the Nakasuji/ Brunner et al. system discussed above in order to have the same degree of control as in the Lo et al. apparatus. Lo et al. also teaches, at lines 38-44 in column 7 and lines 38-40 in column 8, that an alignment controller to control the position of the sample is needed and may comprise a laser interference type distance measuring unit (laser interferometer) for observing the surface of the object of

inspection and providing feedback to determine the coordinates of the stage. It would have been obvious to a person having ordinary skill in the art to provide such an alignment controller including a laser interferometer as the controller in the Nakasuji/ Brunner et al. apparatus discussed above that Lo et al. teaches is required.

Claims 110 and 112 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakasuji, Brunner et al., and Lo et al. as applied to claims 106-108 and 111 above, and further in view of U.S. Patent No. 4,911,103 to Davis et al. While Lo et al. teaches a person having ordinary skill in the art to provide the Nakasuji apparatus with a conventional transport mechanism, including a loading chamber (loadlock subsystem 52), and to provide a vibration isolator (50) for preventing vibrations of the object under testing, neither Nakasuji, Brunner et al., nor Lo et al. discuss the problem of dust adhering to a wafer as the loading chamber is evacuated. Davis et al. discusses this problem at line 64 in column 10 through line 31 in column 11 and teaches that it occurs whenever wafers are transferred into a vacuum chamber through a loading chamber and further teaches to solve it by supplying a clean gas to the wafer. It would have been obvious to a person having ordinary skill in the art to apply Davis et al.'s solution to this problem, which would inherently occur in the Nakasuji/Brunner et al./Lo et al. apparatus discussed above, by using Lo et al.'s loadlock subsystem as a mini-environment chamber for supplying a clean gas to said object under testing to prevent dust from attaching to said object under testing. Davis et al. also teaches, at lines 20-27 in column 23, that any number of load lock chambers and processing modules and transfer arms can be provided to deliver wafers between any two chambers in any sequence if desired. The provision of a plurality of loading chambers disposed between the mini-environment chamber discussed above and the testing chamber, each

adapted to be independently controllable in a vacuum atmosphere, a first transport unit for transporting an object under testing between one of the loading chambers and the mini-environment chamber, and a second transport unit for transporting said object under testing between one of said loading chambers and said testing chamber would therefore have been an obvious duplication of parts in accordance with Davis et al.'s suggestion. Davis et al. also teaches, at lines 42-61 in column 13, to perform a rough alignment of the object of inspection in the XY-directions and in the direction of rotation within the mini-environment space and it would have been obvious to a person having ordinary skill in the art to also include this function in the Nakasuji/Brunner et al./Lo et al. apparatus discussed above for the same reasons discussed by Davis et al., i.e. quicker throughput.

Claims 114, 121, 122, and 142 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,430,292 to Honjo et al. Honjo et al. discloses an inspection apparatus (2) for inspecting an object of inspection by irradiating the object of inspection with charged particles comprising: a working chamber controllable into a vacuum atmosphere for inspecting an object of inspection (not labeled but inherently required because electron beam optical systems only work in a vacuum); a beam generating means (21, 101, 311) for emitting the charged particles as a beam; a primary electronic optical system (25) wherein a plurality of beams (B) is guided to irradiate the object (S) of inspection held in the working chamber, and a secondary optical system (630, 631 in Fig. 37) leads secondary charged particles generated from the object to at least one detector (632) where they are detected and the detector output signals are led to an image processing system (355) which forms an image based on the secondary charged particles; a data processing system (356) for displaying and/or memorizing a state information of the

object based on output of the image processing system; and a stage system (3) for holding the object so as to be movable relative to the beam. Honjo et al. also teaches throughout the patent that the apparatus is useful for detecting defects on wafers during or after a manufacturing process. At lines 52-65 in column 27, Honjo et al. describes how the plurality of the charged particle beams are irradiated at positions separated by distance resolution of the secondary optical system. At lines 53-58 in column 9, Honjo et al. teaches that inspection, including the detection of secondary charged particles, occurs while transferring the sample. At lines 29-32 in the same column, Honjo et al. teaches that the points of irradiation by the primary charged beams to be formed on the surface of the sample may be arranged in two dimensional directions, i.e. in rows and columns. It would have been obvious to a person having ordinary skill in the art to arrange these points within a circle that includes the optical axis of the primary electronic optical system so that the primary charged particle beams can be deflected to these points. At line 63 in column 9 through line 21 in column 10, Honjo et al. teaches that the plurality of charged particle beams can be formed by directing a primary beam (B) through an aperture plate having a plurality of apertures adapted to form a plurality of charged particle beams, the beams being formed by containing particles generated by the beam generating means to form irradiation points disposed in rows N in a direction of transferring the sample and in columns M in a direction perpendicular to the direction of transferring the sample, and the apertures are located within a range of a predetermined electron density of the charged particles emitted from the beam generating means.

Applicant's arguments filed August 9, 2005 have been fully considered but they are not persuasive. With regards to the rejection of claims 114, 120-123, and 142 as being anticipated by

Honjo et al., applicant argues that, as with Nakasuji, Honjo et al. does not teach to irradiate the charged particle beams at positions that are "separated larger than a distance resolution of the secondary optical systems." As the examiner explained in the previous Office actions and repeats above, Honjo et al. describes, at lines 52-65 in column 27, how the plurality of the charged particle beams are irradiated at positions separated by distance resolution of the secondary optical system. The arguments filed on August 9 say nothing to refute this statement. Instead, applicant argues: "Honjo et al. discloses a geometric arrangement of the converging electrode 630, the deflection electrode 631 and the detector 632 (Fig. 37) to prevent the reflected electrons of the adjacent beam entering into the detector." However, this argument does not distinguish over Honjo et al. because the geometric arrangement inherently defines the "distance resolution". The fact that Honjo et al. uses a different geometric arrangement than that claimed in the instant claims is irrelevant because nothing in the instant claims excludes the arrangement disclosed by Honjo et al. Applicant also argues that Honjo et al. does not teach the limitation "the plurality of apertures are located within a range of a predetermined current density of the charged particles emitted from the beam source". This argument is incorrect. According to applicant, "Honjo et al. discloses (1): a flat cathode + plurality of apertures in Fig. 23, and (2): a beam source + single aperture in Fig. 8 etc." However, as was explained in previous Office actions and repeated above, there is another embodiment taught by Honjo et al.:

> At line 63 in column 9 through line 21 in column 10, Honjo et al. teaches that the plurality of charged particle beams can be formed by directing a primary beam (B) through an aperture plate having a plurality of apertures adapted to form a plurality of charged particle beams, the beams being formed by containing particles generated by the beam generating means to form irradiation points disposed in rows N in a direction of transferring the sample and in columns M in a direction perpendicular to the direction of transferring the sample, and the

> apertures are located within a range of a predetermined electron density of the charged particles emitted from the beam generating means.

This embodiment is illustrated in FIGS. 10(*a*) and 10(*b*) of the Honjo et al. patent. Applicant has not pointed out any features that distinguish the claimed invention from the Honjo et al. apparatus using this embodiment to form the plurality of charged particle beams.

Claims 126, 137-140, and 148 are allowed for the reasons explained in the previous Office action.

Claim 136 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The previous rejection under 35 U.S.C. 112, second paragraph, is withdrawn. It is clear that the separator "common to each of the primary charged particle beam irradiation systems and corresponding secondary charged particle optical system" claimed in parent claim 124 is for each pair of primary and secondary optical systems, so a plurality of separators are claimed and there is no conflict between claim 136 and its parent claim.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack I. Berman whose telephone number is (571) 272-2468. The examiner can normally be reached on M-F (8:30-6:00) with every second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jack I. Berman
Jack I. Berman
Primary Examiner
Art Unit 2881

jb
9/18/05